

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

RECEIVED  
CENTRAL FAX CENTER

Page 3 of 14

AUG 23 2006

**REMARKS**

Reconsideration of this application is requested. The claims are not amended. The claims submitted for reconsideration are claims 1 - 17.

**I. Co-Pending Application 10/532,143**

This application is commonly owned with application 10/532,143. A terminal disclaimer relative to 10/532,143 accompanies this amendment.

**II. Rejections under 35 U.S.C. §103 - US 6,620,312 (Murphy)**

**Claims 1 - 10**

This application is a Continuation-in-Part of Serial No. 09/601,867, which is the National Phase Application of PCT/US99/02986. The priority date for PCT/US99/02986 is February 13, 1998, based on a claim of priority to U.S. Provisional Patent Application 60/074,579.

Claims 1 - 10 of this application correspond to subject matter described in 60/074,579. Thus, claims 1 - 10 are entitled to a priority date of February 13, 1998.

The earliest priority date of Murphy is also February 13, 1998. Thus, Murphy cannot serve as a prior art reference against this application.

**Claims 11 - 17**

The rejection of claims 11 -17 under 35 U.S.C. §103(a) over Murphy is respectfully traversed. Murphy does not describe or suggest a unitized catalyst having components (i) and (ii) as required by claim 11, nor does Murphy describe

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 4 of 14

or suggest selecting a ratio of components within the unitized catalyst according to element (iii) of claim 11. Because Murphy does not describe, suggest, or even recognize the importance of the claimed ratio of components, Murphy does not achieve the improved yields that applicants have unexpectedly found.

Additionally, to support this rejection, the Office Action apparently relies on the mere fact that a proposed modification of the prior art may be within the skill level of one of ordinary skill in the art. Such reasoning cannot serve as a basis for a prima facie case of obviousness. (*Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I))

#### **Claim 11**

Claim 11 provides a method for hydroisomerizing a waxy feed, including:

- (a) contacting the waxy feed under hydroisomerization conditions with a catalyst comprising a unitized mixed powdered pellet catalyst, said catalyst comprising:
  - (i) at least one first component selected from 8, 10 and 12 ring molecular sieves, and mixtures thereof, having a metal hydrogenation component dispersed thereon;
  - (ii) at least one second component selected from 8, 10 and 12 ring molecular sieves, and mixtures thereof, having a metal hydrogenation component dispersed thereon; and
  - (iii) wherein said first and second components are present in a ratio such that when evaluated in the conversion of methyl cyclohexane at 320°C to 1,1-dimethylcyclopentane, 1,2-dimethylcyclopentane, 1,3-

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 5 of 14

dimethylcyclopentane and ethylcyclopentane, the catalyst will provide a trans-1,2-/trans-1,3-dimethylcyclopentane ratio in the range of less than about 1 and a selectivity to ethylcyclopentane, at 10% conversion, of at least about 50%.

Murphy does not describe or suggest contacting a waxy feed with a unitized catalyst having the components (i) and (ii) of the claimed invention

Murphy provides a method for producing a lube basestock from a waxy feed. In particular, Murphy describes processing a feed under hydrocatalytic dewaxing conditions with a catalyst composed of at least two components. The first component of the catalyst is a catalytically active metal component on a dewaxing catalyst, such as a zeolite dewaxing catalyst, while the second component is a catalytically active metal on an amorphous hydroisomerization catalyst or on a refractory metal oxide catalyst. Murphy does not provide any teaching or suggestion that the second, amorphous hydroisomerization or refractory metal oxide component can be omitted from a catalyst. Even the definition of "unitized" in Murphy requires the presence of both types of catalyst:

The term "unitized" as used here means that each pellet is one made by mixing together powdered molecular sieve dewaxing catalyst(s) with powdered amorphous isomerization catalyst(s) and pelletizing the mixture to produce pellets each of which contain all of the powder components previously recited. (Col. 4, lines 45 – 51)

Thus, all of the unitized catalysts taught by Murphy require the presence of both a zeolite/molecular sieve type component and an amorphous type component. By contrast, the claimed invention requires contacting a waxy feed with a unitized

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 6 of 14

catalyst composed of two molecular sieve components. (Note that the definition of unitized in the specification is more general, requiring only that a powdered first component and a powdered second component be mixed together and pelletized.) In order to arrive at the unitized catalyst required by the claimed invention, one of skill in the art would have to ignore the express teaching of Murphy and select a catalyst containing two molecular sieve components, instead of one zeolite/molecular sieve type component and one amorphous component. No motivation or suggestion is provided in Murphy to ignore this express teaching of Murphy and instead select a unitized catalyst according to the claimed invention.

Murphy does not describe or suggest element (iii) of the claimed invention

Murphy also fails to describe or suggest element (iii) of the claimed invention, which provides the ratio of components to be used in the catalyst.

In Claim 11, element (iii) specifies two requirements for the amount of a first and second component in a catalyst used to contact a waxy feed. The requirements are based on evaluation of the components in a conversion reaction of methylcyclohexane at 320°C to 1,1-dimethylcyclopentane, 1,2-dimethylcyclopentane, 1,3-dimethylcyclopentane, and ethylcyclopentane. One requirement relates to the ratio of trans-1,2-dimethylcyclopentane and trans-1,3-dimethylcyclopentane produced. The second requirement specifies a selectivity to ethylcyclopentane at 10% conversion. Applicants have found that this combination of requirements leads to improved lube basestock yield when contacting a waxy feed.

Murphy entirely fails to describe or suggest element (iii) of Claim 11. In fact, the Office Action acknowledges that Murphy does not teach element (iii) of claim 11. (Office Action, page 4) In an apparent effort to cure this deficiency, the Office Action asserts that "[A]ny ratio of components (i) and (ii) may be used in the process of

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 7 of 14

the prior art since the method of hydroisomerating a waxy feed to produce a lube basestock is the same.” This is not a sufficient basis, however, for forming a prima facie case of obviousness.

In order to form a proper prima facie case of obviousness, each and every element of a claimed invention must be described or suggested, either explicitly or implicitly. (See *In re Royka*, 490 F.2d 981 (CCPA 1974).) The Office Action acknowledges that there is no explicit teaching or motivation to arrive at the claimed invention based on Murphy. The Office Action also fails to point to any implicit or inherent teaching of Murphy that would lead one of ordinary skill in the art to the claimed invention. Instead, the Office Action merely takes the position that any combination of components (i) and (ii) may be used in the process of the prior art. (Office Action, page 4). This is a statement that it would be within the skill level of one of ordinary skill in the art, not a motivation to arrive at the claimed invention based on the prior art. Regardless of whether this assertion is true, the fact that a modification is within the skill level of one of ordinary skill in the art cannot serve as a basis for a prima facie case of obviousness. (*Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I)) As a result, the reasoning provided in the Office Action fails to provide a proper prima facie case of obviousness.

Claims 11 – 17 are allowable in view of Murphy

Based on the above, Murphy fails to describe or suggest multiple elements of the claimed invention. Murphy does not describe or suggest contacting a waxy feedstock with a unitized catalyst containing components (i) and (ii) according to the claimed invention. Murphy also does not describe the requirements specified in element (iii) to select the ratio of components needed to produce the improved lube basestock yields of the claimed invention. In order to arrive at the claimed invention based on Murphy, one of skill in the art would first have to ignore this entire broad

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 8 of 14

range of catalysts, and instead select a combination of components not described in Murphy. One of skill in the art would then need to combine these components according to standards not described in Murphy. No motivation or suggestion is provided in Murphy to make these drastic changes. The mere fact that one of skill in the art might accidentally practice the claimed invention when attempting to implement the method of Murphy is not sufficient to form a prima facie case of obviousness. For at least these reasons, reconsideration and withdrawal of the rejection of claims 11 – 17 is requested.

**III. Rejections under 35 U.S.C. §103 – US 5,723,716; 5,770,542; and 5,977,425 (Brandes)**

**Claims 1 - 10**

The rejection of claims 1 – 10 under 35 U.S.C. §103(a) over each of the Brandes references is respectfully traversed. The Brandes references do not describe or suggest contacting a waxy feed with a unitized catalyst having a ratio of components according to element (iii) of claims 1 or 10. Because the Brandes references do not describe, suggest, or even recognize the importance of the claimed ratio of components, the Brandes references do not achieve the improved yields that applicants have unexpectedly found. Additionally, to support this rejection, the Office Action apparently relies on the mere fact that a proposed modification of the prior art may be within the skill level of one of ordinary skill in the art. Such reasoning cannot serve as a basis for a prima facie case of obviousness. (Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I))

In Claims 1 and 10, element (iii) specifies two requirements for the amount of a first and second component in a catalyst used to contact a waxy feed. The

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 9 of 14

requirements are based on evaluation of the components in a conversion reaction of methylcyclohexane at 320°C to 1,1-dimethylcyclopentane, 1,2-dimethylcyclopentane, 1,3-dimethylcyclopentane, and ethylcyclopentane. One requirement relates to the ratio of trans-1,2-dimethylcyclopentane and trans-1,3-dimethylcyclopentane produced. (In claim 1, this ratio must be in the range of less than about 1, while in claim 10 this ratio must be in the range of at least 1.) The second requirement specifies a selectivity to ethylcyclopentane at 10% conversion. Applicants have found that this combination of requirements leads to improved lube basestock yield when contacting a waxy feed.

The Office Action acknowledges that the Brandes references do not teach element (iii) of either claim 1 or claim 10. (Office Action, page 5) Instead, the Brandes references generally describe that any ratio of components from 100:1 to 1:100 can be used. In an apparent effort to cure this deficiency, the Office Action asserts that "[A]ny ratio of components (i) and (ii) may be used in the process of the prior art since the method of hydroisomerizing a waxy feed to produce a lube basestock is the same." This is not a sufficient basis, however, for forming a prima facie case of obviousness.

In order to form a proper prima facie case of obviousness, each and every element of a claimed invention must be described or suggested, either explicitly or implicitly. (See *In re Royka*, 490 F.2d 981 (CCPA 1974).) The Office Action acknowledges that there is no explicit teaching or motivation to arrive at the claimed invention based on the Brandes references. The Office Action also fails to point to any implicit or inherent teaching of the Brandes references that would lead one of ordinary skill in the art to the claimed invention. Instead, the Office Action merely takes the position that any combination of components (i) and (ii) may be used in the process of the prior art. (Office Action, page 5). This is a statement that it would be within the skill level of one of ordinary skill in the art,

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 10 of 14

not a motivation to arrive at the claimed invention based on the prior art.

Regardless of whether this assertion is true, the fact that a modification is within the skill level of one of ordinary skill in the art cannot serve as a basis for a prima facie case of obviousness. (Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I)) As a result, the reasoning provided in the Office Action fails to provide a proper prima facie case of obviousness.

#### **Claims 11 - 17**

The rejection of claims 11 – 17 under 35 U.S.C. §103(a) over the Brandes references is respectfully traversed. Similar to Murphy, the Brandes references do not describe or suggest contacting a waxy feed with a unitized catalyst having components (i) and (ii) as required by claim 11, nor do the Brandes references describe or suggest selecting a ratio of components within the unitized catalyst according to element (iii) of claim 11. Because the Brandes references do not describe, suggest, or even recognize the importance of the claimed ratio of components, the Brandes references do not achieve the improved yields that applicants have unexpectedly found. Additionally, to support this rejection, the Office Action apparently relies on the mere fact that a proposed modification of the prior art may be within the skill level of one of ordinary skill in the art. Such reasoning cannot serve as a basis for a prima facie case of obviousness. (Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I))

The Brandes references do not describe or suggest forming a unitized catalyst having the components (i) and (ii) of the claimed invention

The Brandes references provide a method for producing a lubc basestock from a waxy feed. One of the steps described in the Brandes references is processing a feed under upgrading conditions with a catalyst composed of at least two components.



U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 11 of 14

The first component of the catalyst is a catalytically active metal component on a dewaxing catalyst, such as a zeolite dewaxing catalyst, while the second component is a catalytically active metal on an amorphous hydroisomerization catalyst or on a refractory metal oxide catalyst.

The Brandes references do not provide any teaching or suggestion that the second, amorphous hydroisomerization or refractory metal oxide catalyst can be omitted. Even the definition of "unitized" in the Brandes references requires the presence of both types of catalyst:

The term "unitized" as used here means that each pellet is one made by mixing together powdered molecular sieve dewaxing catalyst(s) with powdered amorphous isomerization catalyst(s) and pelletizing the mixture to produce pellets each of which contain all of the powder components previously recited. (Col. 4, lines 45 – 51)

Thus, all of the unitized catalysts taught by the Brandes references require the presence of both a 10 member ring unidirectional pore inorganic oxide molecular sieve type component and an amorphous type component. By contrast, the claimed invention requires a unitized catalyst composed of two molecular sieve components. In order to arrive at the unitized catalyst required by the claimed invention for contacting the waxy feed, one of skill in the art would have to ignore the express teaching of the Brandes references and formulate a catalyst containing two molecular sieve components, instead of one zeolite/molecular sieve type component and one amorphous component. No motivation or suggestion is provided in the Brandes references to ignore this express teaching to form a unitized catalyst according to the claimed invention.

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 12 of 14

**The Brandes references do not describe or suggest element (iii) of the claimed invention**

The Brandes references also fail to describe or suggest element (iii) of the claimed invention, which provides the ratio of components to be used in the catalyst.

In Claim 11, element (iii) specifies two requirements for the amount of a first and second component in a catalyst used to contact a waxy feed. The requirements are based on evaluation of the components in a conversion reaction of methylcyclohexane at 320°C to 1,1-dimethylcyclopentane, 1,2-dimethylcyclopentane, 1,3-dimethylcyclopentane, and ethylcyclopentane. One requirement relates to the ratio of trans-1,2-dimethylcyclopentane and trans-1,3-dimethylcyclopentane produced. The second requirement specifies a selectivity to ethylcyclopentane at 10% conversion. Applicants have found that this combination of requirements leads to improved lube basestock yield when contacting a waxy feed.

The Brandes references entirely fail to describe or suggest element (iii) of Claim 11. In fact, the Office Action acknowledges that the Brandes references do not teach element (iii) of claim 11. (Office Action, page 6) In an apparent effort to cure this deficiency, the Office Action asserts that “[A]ny ratio of components (i) and (ii) may be used in the process of the prior art since the method of hydroisomerating a waxy feed to produce a lube basestock is the same.” This is not a sufficient basis, however, for forming a prima facie case of obviousness.

In order to form a proper prima facie case of obviousness, each and every element of a claimed invention must be described or suggested, either explicitly or implicitly. (See *In re Royka*, 490 F.2d 981 (CCPA 1974).) The Office Action acknowledges that there is no explicit teaching or motivation to arrive at the claimed invention based on the Brandes references. The Office Action also fails to point to any

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 13 of 14

implicit or inherent teaching of the Brandes references that would lead one of ordinary skill in the art to the claimed invention. Instead, the Office Action merely takes the position that any combination of components (i) and (ii) may be used in the process of the prior art. (Office Action, page 5). This is a statement that it would be within the skill level of one of ordinary skill in the art, not a motivation to arrive at the claimed invention based on the prior art. Regardless of whether this assertion is true, the fact that a modification is within the skill level of one of ordinary skill in the art cannot serve as a basis for a prima facie case of obviousness. (Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308 (Fed. Cir. 1999); MPEP 2143.01(I)) As a result, the reasoning provided in the Office Action fails to provide a proper prima facie case of obviousness.

Claims 11 – 17 are allowable in view of the Brandes references

Based on the above, the Brandes references fail to describe or suggest a significant portion of the claimed invention. The Brandes references do not describe or suggest forming a unitized catalyst containing components (i) and (ii) according to the claimed invention. The Brandes references also do not describe the requirements specified in element (iii) to select the ratio of components needed to produce the improved lube basestock yields of the claimed invention.

**III. Conclusion**

Having demonstrated that all rejections of claims have been overcome, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

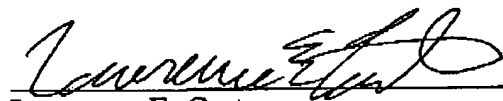
If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

U.S. Serial Number: 10/532,142  
Reply to Office Action of: June 13, 2006  
Family Number: P1998J018A

Page 14 of 14

If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1330.

Respectfully submitted,



Lawrence E. Carter  
Attorney for Applicant(s)  
Registration No. 51,532  
Telephone Number: (908) 730-3632  
Facsimile Number: (908) 730-3649

☒ Pursuant to 37 CFR 1.34(a)

ExxonMobil Research and Engineering Company  
P. O. Box 900  
Annandale, New Jersey 08801-0900

8/22/06